NEW OR NOTEWORTHY FUNGI.—Part IV.

By W. B. Grove, M.A.

(Plates 515, 516.)

(Concluded from p. 18.)

165. Trichosporium chartaceum Sacc. Syll. Fung. iv. 294.

Forming scattered, orbicular, black spots, 1–2 mm. diam. Hyphæ vaguely branched, 4 μ diam.; conidia numerous, pulverulent, brown or dark olive-brown, globose or elliptic, rather rough, 4–6 × 4 μ.

On damp brown paper, Birmingham, May. This differs from the type only in the fact that the spores are not smooth, but roughened and slightly angular, probably because they are more mature. The fact that spores which are ultimately rough are often quite smooth in their earlier stages has been the cause of many mistakes.

166. Scolecotrichum graminis Fckl. Sacc. Syll. Fung. iv. 348.

Tufts of conidiophores dense, black, spot-like, seated in long rows on elongated, arid, ochraceous spots. Hyphæ erect, continuous, simple, nodulose, 100 × 6 μ, of a dusky but clear olive-brown colour. Conidia of the same colour, obclavate, uniseptate, averaging 40 × 9 μ. (Tab. 516, fig. 5.)

On the under surface of living leaves of *Phleum pratense*, Marston Green (Wk.), July. This might be considered identical with *S. sticticum* B., except that it is seated on conspicuous ochraceous spots, and appears to be decidedly parasitic.

69. Diplococcium spicatum Grove, Journ. Bot. (1885), p. 167, t. 257, f. 7; Sacc. Syll. Fung. iv. 374.

This very rare fungus I have since found at Studley Castle, in addition to the original locality at Sutton. The new specimens revealed to me that (owing to a mistake in noting the magnifying power used) I had given the size of the conidia (*loc. cit.*) at half their proper magnitude; they should be "20 × 10 μ." They are at first obovate, not constricted, and pellucid but with a very dark septum, afterwards assuming the mature form.

167. Helminthosporium inconspicuum C. et E. Sacc. Syll. Fung. iv. 411.

Hyphæ 250–300 × 10–11 μ, 6–8-septate, somewhat dark, paler at the apex, where they are flexuous and nodulose. Conidia oblong-lanceolate or nearly cylindrical, rounded at the ends, up to 120 μ long, 15–16 μ thick, 5-septate, at length 8–9-septate, wall always nearly diaphanous, pale olivaceous brown. (Tab. 516, fig. 4.)

On fading grass-leaves, Longdon Green, Lichfield (St.), September. I have already recorded (Journ. Bot. 1885, p. 168) a variety of this species; the specimens now described seem to be nearly of the type, at any rate as figured by Peck (34th Report p. 51, t. iii. f. 4–6). The chief mark of the species lies in the pale

diaphanous epispore, for which reason it is quite inconspicuous and cannot be seen except by microscopical examination.

168. Heterosporium gracile Sacc. Syll. Fung. iv. 480.

Hyphæ in little clusters which are often slightly circinating or scattered over oblong or elliptical dry patches of the leaf; spots pale, surrounded by a distinct fuscous-purple border. Hyphæ erect, rather flexuose, septate, nodulose upwards, olive, 40–150 × 9–10 μ, having at the base a little knot of a few dark cells. Conidia oblong, 1–3- (or even 4-) septate, constricted at the septa, 30–45 × 16–18 μ; cells cubical or rounded, at first pale and smooth, then dark olive and distinctly muriculate. (Tab. 516, fig. 6.)

On leaves of *Iris germanica*, Studley Castle, October.

169. Speira cohærens Preuss, Sacc. Syll. Fung. iv. 515.

Conidia erect, collected into little clusters which are thickly scattered or even arranged in lines, olivaceous-green in mass, singly pellucid olive, 25–40 × 20 μ, oblong-obovate, not always plane but often consisting of two layers in the centre, composed of 4–6 series of joints. Joints subquadrate, translucent, 4–5 μ diam., many with a large oily nucleus.

On bark, Maxstoke Priory (Wk.), August. This seems to be the species of Preuss, but I would rather consider it a translucent variety of *S. toruloides*, possibly a young state.

170. Speira effusa (Peck) Sacc. Syll. Fung. iv. 514.

Conidia 20–30 μ wide, effused in a blackish brown velvety stratum, resembling those of *Speria toruloides*, but the separate joints are only 5–6 μ wide.

On dead wood, Studley Castle, March. This also I consider to be a mere variety of *S. toruloides* Corda. They should be arranged thus:—

S. toruloides Corda.
var. *effusa* Peck.
var. *translucens* m. = *S. cohærens* Preuss.

The breadth of the joints of *S. toruloides* given by Saccardo (*l. c.* p. 514), *viz.* 8–9 μ, is certainly greater than the usual state.

171. **Septosporium elatius** *m.* Effusum, atrum, velutinum; hyphis biformibus, sterilibus filiformibus, brunneo-atris, opacis, flexuosis, basi subincrassatis, superne interdum subpellucidis, multiseptatis, ad septa vix constrictis, 500–1000 × 18–20 μ; fertilibus (h. e. conidiorum pedicellis) brevibus, olivaceis, 6–8 μ cr., pellucidis, 4–5-septatis, apice in conidia clavata abeuntibus; conidiis 20–25 μ lat., olivaceis, vix obscurioribus, 2–5-septatis, cum pedicello 80–130 μ long., subinde curvatis, septo longitudinali rarissimo. (Tab. 516, fig. 7.)

In cortice, Aberystwyth, Jan. *Macrosporium nigrellum* C. et E. peraffine videtur, conidiorum insertione neglecta.

172. Alternaria tenuis Nees, Sacc. Syll. Fung. iv. 545; Fung. Ital. t. 737.

Forming a very thin layer; hyphæ very short, erect, septate, pale in colour; conidia in branched chains, lageniform, olivaceous,

3–5-septate, with a few longitudinal septa, 25–35 × 12–14 μ. (Tab. 516, fig. 8.)

On various leaves and stems, Edgbaston, Studley, &c. Barely perceptible to the naked eye. The conidia are formed in a basifugal manner, the youngest at the apex.

173. Graphium Passerinii Sacc. Syll. Fung. iv. 613.

Stems erect, black, shining, hair-like, subulate, smooth, 1–1½ mm. high, formed of numerous slender compacted brown septate hyphæ, all parallel and gradually thinning out at the top, not markedly free at the tips. Head of conidia grey, oblong-cylindrical, forming about ⅓–½ of the height of the whole. Conidia hyaline, 5 × 2½ μ, ovate-oblong, but somewhat acute at one end, very numerous and apparently involved in mucus.

On dried twigs of Bramble, Hunnington (Ws.), June.

174. Stysanus Mandlii Mont. Ann. Sci. Nat. (1845), p. 365, t. 14, f. 2; Sacc. Syll. Fung. iv. 623.

Gregarious; stems 1–1¼ mm. high, 20–25 μ thick, nearly black, fibrous, slender and straight; head elongate-cylindrical, sometimes forked, greyish brown. Conidia in short chains, ovate or ellipsoid, 3½–5 × 2–2½ μ, pale brownish, diaphanous.

On twigs of Gooseberry, Studley Castle, April. I should have put it down as a *Pachnocybe*, if I had not seen the spores in chains. It differs from the type in having paler spores.

175. Stysanus cybosporus D. Sacc. Staz. Sper. Ital. xxxi. p. 80.

Coremia at first tubercularioid, afterwards stilboid, gregarious, olive-coloured; when young wart-like, 1 mm. broad, ½ mm. high, composed of a dense mass of branched septate olive hyphæ, bearing a few conidia at their summits; when older, taller and looser, like a *Stysanus*, 1–1½ mm. high, paler upwards, and nearly as broad as the height. Hyphæ of stalk compact and parallel, not very closely septate, olive, 5 μ diam., repeatedly branched upwards; branches paler, composed of cuboid joints which at length separate from one another except for a narrow central isthmus, and become rounded spores, 6 μ diam. The spores are very pale olive, but clear, and retain for a long time traces of their mode of origin, being square-shouldered, and minutely apiculate on two opposite sides.

Abundant on dead herbaceous stems, Cannon Hill Park, Birmingham, July to November.

176. **Sphacelia Curreyana** *m.* Hyphis dense intertextis, albis, 2–2½ μ diam.; sporophoris ramosis, ramis primo solitariis, dein oppositis, denique verticillatis, irregularibus; conidiis globosis, 3–5 μ, in apicibus ramorum, ut videtur, solitariis.

In sclerotiis *Sclerotiniæ Curreyanæ*, in *Junco*, Sutton Park (Wk.). The sclerotia were of a delicate pink inside, and during the previous year the same tufts of rushes had produced a plentiful crop of the *Sclerotinia*.

177. Hymenula callorioides Sacc. Syll. Fung. iv. 669. Var. corticis *m.*

Sporodochiis sparsis gregariisve, ½ mm. latis, lentiformibus,

succineis v. albidis, gelatinosis; sporophoris prælongis, usque ad 200 μ, dense fasciculatis, bacillaribus, 1 μ cr., simplicibus, septatis; conidiis numerosissimis, cylindraceis, rectis v. subinde curvulis, 9–10 × 1½ μ, hyalinis, coacervatis hyalino-succineis. (Tab. 516, fig. 9.)

In cortice, Studley Castle, April. Sporophora et apice et a latere ad septa conidia gignunt.

178. Lachnea coprinaria Phill. Discom. p. 224; Mass. Fung. Fl. iv. 310. Var. minima *m.*

Ascophoris ¾–1 mm. diam., gregariis, sessilibus, hemisphæricis, coccineis; margine elevato, piloso. Pilis brunneis, 300–450 × 12–20 μ, crasse tunicatis, superne attenuatis, rigidis, erectis, septatis. Ascis cylindraceis, 200 × 20 μ, apice truncatis, basi subattenuatis; sporidiis oblique monostichis, ellipticis, levibus, hyalinis, continuis, utrinque obtusis, eguttulatis, 22–25 × 11–12 μ; paraphysibus superne subincrassatis, granulis rubris repletis.

On rabbits' dung, Sutton Park, May. At first sight closely resembling *Ascophanus pilosus*. Outer cells of cortex very large, hyaline, 40–50 μ diam. Marginal hairs in two or three rows, very similar to those of *L. stercorea*, but without the stellate hairs of that species, though mixed below with shorter subhyaline hairs, as in *L. coprinaria*, which, however, is ½–1 cm. across. Possibly this variety owes its smaller dimensions to its habitat.

179. **Chætomium chlorinum** *m.* *Ch. Fieberi* var. *chlorina* Sacc. Mich. i. 27; Syll. Fung. i. 223.

Perithecia black, gregarious, subovate, arranged more or less in rows, completely hidden by a mass of very long pili, which are simple (rarely branched), septate, roughish, slender and flexuous, at first yellowish, then yellowish green, at length olive-brownish and (under the microscope) fuscous, paler upwards, 4 μ diam. Asci clavate, longly stipitate, soon diffluent; sporidia eight, distichous and at last conglobate at summit of ascus, at first colourless, then greenish yellow, at length smoky-olive, lemon-shaped, uniguttulate, and slightly unequal-sided, 15 × 10 μ when mature. Paraphyses numerous, very delicate, filiform, longer than the asci. Asci 50–55 × 16–20 (part. sporif.), stipes 40–50 μ long; paraphyses 2½–3 μ diam. and about 100–130 μ long.

On rotting stems of Jerusalem Artichoke and similar stems, Sutton Coldfield (Wk.) and Hunnington (Ws.), June, September. *Ch. olivaceum* C. et E. (Grevill. vi. 96) seems to be closely allied, but the sporidia are described as "brunneis."

Ch. chlorinum appears at first as a small tuft of hairs which are seated on a black tubercle; the hairs are blackish at the base, then greenish, at the summit yellow. In this stage they are nearly straight, but later, as the perithecium develops, they become very long and intricately flexuous. Their roughness is due to minute crystals which are easily removed by water.

Var. rufipilum *m.* Peritheciis ½–1 mm. altis, ovatis v. lageniformibus, atris, acutis, vertice junioribus glabratis, alibi pilis simplicibus, tenuibus, leviter flexuosis, 5 μ cr. vestitis; pilis primo

olivaceo-brunneis, dein roseo-rufis, non opacis, asperulis, tenuiter parceque septulatis, superne dilutioribus et angustioribus, senio longissimis, tortuosis, intricate intertextis et perithecia obtegentibus. Asci clavatis, stipitellatis; paraphysibus non visis; sporidiis 8, distichis v. apice conglobatis, limoniiformibus, ex hyalino fuligineis, 15 × 10 μ.

On stems of *Heracleum*, Hunnington (Ws.), in company with *Ch. chlorinum* as well as *Ch. comatum*. Distinguished from every other form of *Chætomium* by its distinctly rufous hairs.

180. Sordaria lignicola Fckl. Sacc. Syll. Fung. i. 236.

Perithecia half immersed in soft rotten wood, globose, ending in a thick rough truncate neck, about as long as the perithecium is wide. Asci fusiform, 150 × 14 μ; sporidia immature, cylindrical, curved, hyaline, multiguttulate, 50 × 4, provided at each end with a short hyaline appendage, equal to the breadth of the sporidium in length.

On soft wood, California, Harborne (Ws.), August. There were no mature sporidia, but otherwise the specimens seemed to belong to this species.

181. Rosellinia mastoidea Sacc. Syll. Fung. i. 258.

Perithecia superficial, gregarious, but not or rarely confluent, 1 mm. diam., globose, smooth, glabrous, with a short and beautiful little papillate ostiolum; asci cylindrical, 100 × 10 μ; sporidia eight, monostichous, oblong-ovoid, obtuse at the ends, 20 × 8 μ, without any appendages, dusky brown, somewhat flattened and therefore thinner in side view than in face view; paraphyses numerous filiform.

On fallen branches, Studley Castle, April. A conspicuous and beautiful species.

182. **Trichosphæria crassipila** *m.* Tenuissime in subiculo atro effusa; peritheciis globosis, astomis, atris, pilis brevibus obductis; pilis atro-viridulis, scabriusculis, semi-pellucidis, 250–300 μ long., basi 20 μ cr., apicibus attenuatis. Ascis cylindricis, 100–120 × 11 μ, paraphysibus numerosis, linearibus obvallatis; sporidiis oblique monostichis, ovali-oblongis, utrinque obtusis, continuis, eguttulatis, subgranulosis, 10–11 × 6 μ, achrois.

In ligno putri, Studley Castle, Nov. Hairs thick-walled below, tapering to a rather thin, narrow point; base of the perithecium furnished with nodulose, septate, brown hyphæ, 3–4 μ thick. The perithecia are greenish black by transmitted light.

183. Wallrothiella minima Sacc. Syll. Fung. i. 455.

Scattered or gregarious; perithecia very minute, black, carbonaceous, ovate-acute, terminating in a sharp minute ostiole. Asci cylindrical, stipitate, 50 × 5 μ (part. sporif.); sporidia obliquely monostichous, oblong, hyaline, 7–8 × 3 μ.

Seated among the fibres of bare wood, King's Norton and Selly Oak (Ws.), December–August.

184. Diaporthe Tulasnei Nits. Sacc. Syll. Fung. i. 657.

Stromata short, oblong, black, slightly raised, with a few perithecia immersed in each. Perithecia globose, with a scarcely

prominent ostiole. Asci oblong or subclavate 60 × 6–7 μ; sporidia distichous, fusiform, obtuse at each end, uniseptate, 4-guttulate, not constricted, subhyaline, 14–15 × 3 μ.

On stems of *Urtica dioica*, Studley Castle, May. The matrix is stained deeply with black round each stroma.

185. Leptosphæria rubicunda Rehm, Sacc. Syll. Fung. ii. 25; Fung. Ital. t. 292.

Perithecia gregarious, immersed, then erumpent and nearly free, the matrix tinged round them with a wide crimson stain, brownish black, globose, papillate, then collapsed, 150 μ diam. Asci cylindrical-clavate; sporidia narrowly fusoid, subclavate, 3-septate, yellowish, 20 × 2½ μ.

On stems of *Conium maculatum*, Studley Castle, November.

186. Leptosphæria microscopica Karst. Sacc. Syll. Fung. ii. 59.

Perithecia arranged in rows, singly or two together, covered by the raised unchanged epidermis, which is pierced by the minute round ostiole, globular or somewhat depressed, smooth, black, under the microscope subtranslucent, parenchymatous, scarcely or not at all papillate, 100–250 μ diam.; asci with very short pedicels, broadly oblong-clavate, obtuse at apex, 90 × 15 μ; sporidia subtristichous, pale brown, triseptate, occasionally constricted, one or two loculi subinflated, oblong-fusoid, slightly curved, obtuse at each end, 24–28 × 6–7 μ; paraphyses few, slender, linear.

On culms and sheaths of *Dactylis glomerata* and *Phleum pratense*, Studley Castle (Wk.), Selly Oak (Ws.), Baggeridge Colliery (St.), July–December. I have also found, at Packwood (Wk.), a form of this approaching *L. vagans* Karst., distinguished by its slightly larger perithecia and spores, the latter measuring 34–38 × 11 μ.

187. Metasphæria culmifida Sacc. Syll. Fung. ii. 174.

Perithecia scattered, or two or three together in a row, covered by the epidermis which is unchanged in colour, at length splitting it and erumpent, ellipsoid or roundish, flattened at the base, with a short subconical ostiole, black, glabrous, shining; asci oblong-clavate, fasciculate, very shortly stipitate, 90 × 14; sporidia fusiform, straight when seen from the front, curved when seen sideways, 3-septate, not constricted, eguttulate, pale yellowish, distichous, 25–30 × 6–9 μ.

On culms of *Poa*, Harborne (Wk.), July.

188. **Pleospora thujæ** *m.* Peritheciis sparsis, emergentibus, rotundatis, 150 μ diam., ostiolo minuto perforatis, atris, glabris, nitidis; ascis oblongis, breviter pedicellatis, 70–90 × 20 μ, vertice rotundatis; sporidiis distichis, flavis, oblongo-clavatis, muriformibus, basi attenuatis, 20–25 × 7–9 μ, junioribus inæqualiter uniseptatis, hyalinis, ad septum constrictis (ad instar Sphærellæ), dein 4–5-septatis, loculis 1–3 septo longitudinali divisis, ad septum primarium semper evidentissime constrictis.

In pagina exteriore squamarum coni *Thujæ occidentalis*, socia

Pestalozzia conigena, Studley Castle, Mart. Perithecii contextus parenchymaticus, obscure olivaceus.

189. Eleutherosphæra longispora Grove.

For description and figure see Journ. Bot. (1907) p. 171, t. 485, f. 3.

190. Phyllosticta hedericola D. et M. Sacc. Syll. Fung. iii. 20.

Spots large, roundish or irregular, whitish, surrounded by a broad brown border. Pycnidia epiphyllous, blackish, numerous, gregarious, globose, sometimes rather flattened, epidermis pierced by the short ostiole. Sporules oblong, faintly biguttulate, involved in mucus, 5–7 × 2–2½ μ.

On ivy-leaves, Studley Castle, May; and Warwick Castle, July, August. Sometimes the margin of each spot is marked by several concentric borders with narrow intermediate bands of whitish brown, like successive waves on a beach.

191. Phyllosticta japonica Thüm. Sacc. Syll. Fung. iii. 25.

Spots large, arid, whitish, distinctly margined with brown, dirty ochraceous below. Pycnidia gregarious, numerous, epiphyllous, minute, punctiform, long covered, then emerging conically. Sporules numerous, ellipsoid, rounded at the ends, with a large guttula, 4–4½ × 2½–3 μ, hyaline.

On fading leaves of *Mahonia japonica*, Studley Castle, May.

192. Phoma grossulariæ S. et S.

Pycnidia gregarious, black, shining, globose-depressed, somewhat collapsed, 0·2–0·3 mm. diam., at first covered by the epidermis, then bursting through by the short obtuse ostiole. Sporules oblong-oval, hyaline, 6 × 4 μ.

On twigs of Gooseberry, Studley Castle, November. The basidia were not seen. Texture of pycnidium olive-brown, parenchymatous. With this were some pycnidia which appeared to be *Dendrophoma pleurospora* Sacc. (Syll. Fung. iii. 178). They were very similar to the others, but had shortly cylindrical sporules, 5 × 1 μ; basidia very conspicuous and branched.

193. Phoma acicola (Lév.) Sacc. Syll. Fung. iii. 100.

Pycnidia single or two together, globose, erumpent, surrounded by the split epidermis, rugulose, black, 250–300 μ diam. Sporules ovate-oblong, 6–9 × 4 μ, hyaline, biguttulate.

On leaves of Scots Pine, Marston Green (Wk.), December.

194. Phoma pinicola Sacc. Syll. Fung. iii. 100.

Pycnidia large, conspicuous, erumpent, black, varying in shape, papillate or obtuse, thick-walled, arranged in rows. Sporules obovate, biguttulate, hyaline, about 10 × 4 μ.

On leaves of *Pinus laricio*, which were still attached to a branch that had been broken off, Studley Castle, October. Bursting through the epidermis in long lines, surrounded by laciniæ.

195. Phoma prunicola (Schw.) Sacc. Syll. Fung. iii.

Pycnidia gregarious, amphigenous, seated mainly in a large irregular cinereous spot which is visible on both sides of the leaf,

bursting through the epidermis, which is sometimes torn into laciniæ, black, ovate, opening by a pore which soon becomes very wide and irregular. Sporules oblong-elliptic, obtuse at both ends, usually faintly biguttulate, 9–10 × 3½ μ.

On fallen dry leaves of *Prunus Lauro-cerasus*, Over Whitacre (Wk.), April.

196. Phoma deusta Fckl. Sacc. Syll. Fung. iii. 155.

Pycnidia minute, scattered, black, depressed, each surrounded by a mass of brown hyphæ which impart a scorched appearance to the spot; ostiole short; sporules straight, oblong, continuous, with a minute guttula at each end, 6 × 1½, hyaline.

On dry bracts, capsules, and peduncles of *Rhinanthus Crista-galli*, Henley-in-Arden (Wk.), February. The spores were few and imperfect; some of the pycnidia contained fasciculate groups of what were evidently immature asci, but repeated searches failed to find any ascospores. In Wyre Forest (Ws.), September, I found what was almost certainly a state of the same species, on the same habitat, but this form was identical with *Zythia rhinanthi* (Lib.), Sacc. Syll. Fung. iii. 615; Saccardo quotes *Sphæronema rhinanthi* Lib. under both. In this case also the pycnidia were minutely parenchymatous, and dark brown under the microscope; it was evidently not a *Zythia*, but a *Phoma*, but the contents of the pycnidia showed no mature spores.

197. Diplodia buxi (Fr.) Sacc. Syll. Fung. iii. 360. Var. minor *m*.

Pycnidiis ut in typo; sporulis valde variis, aliis ovatis continuis uniguttulatis, aliis oblongis 1-septatis fuscis 16–17 × 7–8 μ, muco obvolutis.

The sporules were in all stages of growth; some were ovate and continuous, others were distinctly uniseptate. Some had one large guttula, others were darker and biguttulate; the smallest ones had no guttula. Also they varied in colour from nearly colourless to fuscous olive; the smaller they were the paler; the septate ones were the largest, *e. g.*:—

Round or oval spores, nearly colourless	6 μ
Oval, pale brown, granular . . .	11 × 5 μ
Ovate, uniguttulate, darker . . .	13 × 8 μ
Oblong-ovate, biguttulate, darker still .	13 × 9 μ
Oblong-ellipsoid, uniseptate, fuscous .	16 × 8 μ

But they varied so much that any length could be found from 6 to 17 μ, combined with almost any width from 5 to 9 or 10 μ. The mass of sporules was involved in a granular viscid globule, which dissolved slowly in water.

On half-dead Box-leaves, Sutton Coldfield, January. The type specimens were on *dead* leaves of Box.

198. Diplodina graminea Sacc. Syll. Fung. iii. 413.

Pycnidia ovate-depressed or oblong, often 2 or 3 in a longitudinal series, black, formed beneath the cuticle, which is elevated and pierced by the ostiole, and finally in the compound groups is rimose. Sporules elliptic-oblong or subcylindrical, obtuse at both

ends, tapering somewhat to the base, hyaline, delicately but clearly uniseptate, 14–16 × 4–5 μ, occasionally slightly curved, rarely constricted at the septum.

On culms of *Dactylis*, Selly Oak (Ws.), December. This seems to be so much like Saccardo's species that, although that was on *Cynodon Dactylon*, it is hardly possible to consider it even a variety. Under the microscope the texture of the pycnidium was subtranslucent-olive and parenchymatous. On the lower part of the same culm it passed into a leptostromatoid fungus, probably a *Scirrhia* (*? rimosa*, forma *Dactylidis*), in which the interior was filled with a dense mass of roundish white cells (a sclerotium), without any traces of asci.

199. **Stagonospora socia** *m.* Pycnidiis atris, ostiolo brevi, ab iis *Phyllachoræ junci*, quibus immiscebantur, non distinguendis; subinde autem discretis, stromati non immersis, et tunc minoribus. Sporulis oblongo-cylindricis, nonnunquam basi angustioribus, obtusis, hyalinis, 5-guttulatis (guttulis solito majoribus), dein 4-septatis, 30–35 μ × 10 μ.

In culmis exsiccatis *Junci conglomerati*, Frankley (Ws.), Sept., socia *Phyllachora junci*.

200. Stagonospora graminella Sacc. Syll. Fung. iii. 454.

Pycnidia gregarious, globose, minute, black, innate, then piercing the epidermis by a minute round pore; texture parenchymatous, subtranslucent-fuliginous. Sporules cylindrical, ends obtuse, 20–21 × 3½ μ, 4–6 guttulate, hyaline.

On leaves of grasses in a lawn, Handsworth (St.), September.

CRYPTOSTICTELLA, gen. nov.

Pycnidia erumpentia, globosa. Sporulæ 2-pluriseptatæ, utrinque 1-aristatæ, hyalinæ.

Est Stagonospora, sed sporulis aristatis, vel Cryptostictis sporulis hyalinis prædita.

201. **Cryptostictella bractearum** *m.* Pycnidiis erumpenti-superficialibus, minutissimis (60–100 μ diam.), dense gregariis, semiglobosis v. difformibus, atris, nitidis, subinde ruguloso-sulcatis, junioribus parenchymaticis, dein atris, carbonaceis, apice poro pertusis; sporulis paucis, cylindraceis, utrinque leviter attenuatis v. obtusis, e latere curvulis, hyalinis, 17–18 × 2½–3 μ, tenuiter 3–5-septatis, non constrictis, sub utroque apice oblique 1-aristatis (aristis 12–14 × 0·75 μ), basidiis brevibus suffultis. (Tab. 516, fig. 11.)

In pagina utraque bractearum *Tiliæ europææ*, Studley Castle, Dec.

99. Rhabdospora pleosporoides Sacc. Syll. Fung. iii. 588.

This species, which I have previously recorded (Journ. Bot. 1886, p. 137) on *Rumex* from the Farne Islands, has since occurred at Earlswood (Wk.) on stems of *Heracleum*.

202. Discula macrosperma (Peck), Sacc. Syll. Fung. iii. 675. Var. fraxini *m.*

Pycnidiis imperfectis, sparsis, primo epidermide pustulata

tectis, dein ea radiatim v. sulcatim fissa erumpentibus, atris, globosis, ½–¾ mm. diam., umbilicatis, denique patelliformibus. Sporulis hyalinis, intus granulosis, 30–40 × 12–13 μ, oblongo-ellipticis, basidiis rectis filiformibus 50 × 2½ μ suffultis. (Tab. 516, fig. 13.)

In ramis *Fraxini excelsioris*, Over Whitacre (Wk.), April.

This variety differs from Peck's species in possessing a distinct black pycnidium, which, however, appears to be made from the cortex; it is at first globular, continuous all round, then opens at the top with an umbilicus, and gradually expands to a dirty whitish disc, surrounded by a black margin. The spores are remarkably large, and remind one of the conidia of a *Peronospora*. They are straight in front view, but curved when seen from the side.

There can be little doubt that *Phoma hyalina* Sacc. Syll. Fung iii. 88 (*Sphæropsis hyalina* B. et C.) is the young state of this species.

203. **Glœosporium phacidiellum** *m.* Maculis suborbicularibus, ½–1½ cm. diam., albidis, margine angusto fusco cinctis; acervulis epiphyllis, numerosis, minutis, dilute fuscis, translucentibus, tectis, dein epidermide fissa 3–4 laciniis (ad instar Phacidii) coronatis; conidiis oblongis, obtusis, granulosis fere achrois, 18–20 × 7–8μ, basidiis crassis 40 × 6–7 μ suffultis.

In pagina superiore foliorum viventium *Pruni laurocerasi*, Studley Castle, Mar. Presumably the pycnidium stage of *Trochlia laurocerasi*.

204. **Glœosporium phillyreæ** *m.* Acervulis hypophyllis, non maculicolis, sparsis v. gregariis, atris, epidermide nigrificatâ tectis, dein poro albo pertuso erumpentibus, 150–250 μ. Conidiis hyalinis, ellipticis, interdum subacutatis, biguttulatis, 8–9 × 2–2½ μ.

In pagina inferiore foliorum emortuorum *Phillyreæ mediæ*, Studley Castle, April.

205. Marssonia Delastrei Sacc. Syll. Fung. iii. 770; Trans. Brit. Myc. Soc. iii. 39.

Spots roundish, indeterminate, pale yellowish, indistinct; acervuli small, round, elevated, pallid in centre, with a narrow brown margin. Conidia about 25 × 6 μ, unequal, inæquilateral, clavate-pyriform, often curved, colourless, on short basidia, at length 1-septate below the middle, and oozing out as a white tendril.

On both surfaces of the leaves of *Lychnis diurna*, Berkswell (Wk.), August. Except for the short basidia, the earlier stages, on the same leaves, exactly resembled *Glœosporium lychnidis* Oud.

206. Marssonia Castagnei Sacc. Syll. Fung. iii. 768.

Epiphyllous, forming round, confluent brown spots, without any darker margin. Conidia 25–26 × 9 μ, oblong-pyriform or clavate, curved, hyaline, distinctly septate below the middle, not constricted at the septum, oozing out and forming whitish tendrils.

On the upper surface of fading leaves of *Populus nigra*, Olton (Wk.), November. The spots covered more or less the whole surface of the leaf; under a lens, each spot could be seen dotted over with the little translucent acervuli of (undischarged) conidia.

The septum of the conidia was about $\frac{1}{4}$–$\frac{1}{3}$ of the length from the base.

207. Pestalozzia conigena (Lév.) Sacc. Syll. Fung. iii. 792.

Heaps of spores small, black, scattered or gregarious, erumpent, surrounded by the laciniæ of the torn epidermis. Conidia fusoid, 4-septate, the three middle loculi dark olivaceous, middle one usually darkest, 25–27 × 7 μ; pedicels short, very delicate; aristæ 2–3, shortish, stiff, pellucid, more or less recurved. (Tab. 516, fig. 12.)

On cones of *Thuja occidentalis*, Studley Castle, March. On the same cones was *Pleospora thujæ* m.; see no. 188.

208. Mucor plumbeus Bon. Abh. Nat.-forsch. Ges. Halle, viii. 109 (1864). *Mucor spinosus* Van Tieghem (1876); Fischer, Phycom. p. 203; Trans. Brit. Myc. Soc. i. 193, pl. 9, fig. 8; Grove, Journ. Econ. Biol. vi. pt. 2, p. 38, pl. iii. figs. 1–9.

Sporangiophore $\frac{1}{2}$–1 cm. high, branched. Sporangia round, up to 80 μ diam., brownish, at length black. Columella oblong or pear-shaped, provided at the summit with several (1–15) short stumpy or spiny processes. Spores spherical, smooth, 4–6 or even 8 μ diam., with a distinct greyish brown tint.

On various substances, Birmingham. There was mixed with it a variety (var. *recurvus* m., *l. c.*), in which the branches were curved arcuately downwards. Some observers have found the spores of this species to be rough, not smooth.

209. Peronospora alsinearum Casp. Fischer, Phycom. p. 452.

Conidiophores in dense whitish tufts, 200 μ high, dichotomous above; conidia ellipsoid, varying much in size and form, 26–29 × 16–21 μ. Oospores roundish, bright chestnut-brown, marked with a regular net-work of strong ridges.

On *Spergula arvensis* and *Stellaria media*. Oospores were abundant in early autumn, especially in the leaves, in both cases.

210. Peronospora potentillæ De Bary, Fischer, Phycomyc. p. 473.

Conidiophores forming small dense clusters here and there, 300 × 500 μ high; stalk slender, 4–5 times dichotomous in the upper one-third. Conidia ellipsoid, pale violet, about 22 × 16 μ. Oospores not seen.

On the under side of leaves of *Potentilla Fragariastrum*, Bewdley (Ws.), August, September. Also on *Sanguisorba officinalis*, Water Orton (Wk.). On the former, the conidiophores are mixed with the hairs of the leaf, which are longer than they, and so are not easily to be seen, were it not that the parts of the leaf which they occupy are distinctly visible on the upper side as pallid spots, each exactly delimited by venules.

211. Peronospora alta Fckl. Fischer, Phycomyc. p. 483.

Conidiophores in loose scattered tufts, chiefly on the under side, greyish, occupying large patches which show pale yellowish on the upper surface of the leaf, single or two or three together emerging from the stomata, slender, 200–400 μ high; branches confined to the upper third, 5–6 times forked, erecto-patent, un-

dulately curved, branchlets acute curved, last fork producing two very unequal branchlets, of which the longer is mostly S-shaped, and the shorter strongly recurved. Conidia large, broadly elliptic, rounded at both ends, 29 × 21 μ.

On *Plantago major*, King's Norton (Ws.), July, August. The oospores of this species are said to be unknown.

212. Stilbum erythrocephalum (Ditm.) Sacc. Syll. Fung. iv. 567.

Gregarious, rather crowded; stem short, white, pubescent, obconical, crowned with a roundish, convex, rosy-orange head. Conidia ovoid, 5–6 × 2½–3 μ, hyaline. (Tab. 516, fig. 10.)

On dung of rabbits, Randan Woods, October. Stem about 5 mm. high, clothed with delicate white hairs, and broadening gradually upwards.

Explanation of Plates.

Plate 515.—1. *Oospora hyalinula*, × 250, and spores, × 500. 2. *Œdocephalum glomerulosum*, *a*, × 50; *b*, head of spores; *c*, two heads denuded of spores and free spores, × 300. 3. *Penicillium ovoideum*, *a*, × 500; *b*, Coremium form, × 250. 4. *Sporotrichum chrysospermum*, *a*, × 150; *b*, hypha and spores, × 500. 5. *S. terricolum*, *a*, × 300; *b*, spores, × 500. 6. *Botrytis violacea*, *a*, × 500; *b*, spores, × 1000. 7. *Ovularia primulana*, × 500. 8. *Ramularia primulæ*, spores, × 250. 9. *Fusoma tenue*, spores, × 600. 10. *Tridentaria setigera*, × 600. 11. *Ramularia taraxaci*, × 500.

Plate 516.—1. *Hormiscium callisporum*, × 500. 2. *a*, *Periconia pycnospora*, × 250, and mature spores, × 500; *b*, *P. Desmazieri*, × 500. 3. *Zygodesmus fulvus*, × 250. 4. *Helminthosporium inconspicuum*, hypha, × 200, and spore, × 500. 5. *Scolecotrichum graminis*, *a*, × 350; *b*, spores, × 500. 6. *Heterosporium gracile*, spores, × 200. 7. *Septosporium elatius*, *a*, × 80; *b*, spores, × 250. 8. *Alternaria tenuis*, × 500. 9. *Hymenula callorioides* var. *corticis*, *a*, fertile hypha, × 500; *b*, sterile hypha of the sporodochium, × 250. 10. *Stilbum erythrocephalum*, × 80, and spores, × 500. 11. *Cryptostictella bractearum*, spore, × 1000. 12. *Pestalozzia conigena*, *a*, spore, × 500; *b*, × 750. 13. *Discula macrosperma* var. *fraxini*, spores, *a*, front view; *b*, side view, × 500.

NOTES ON *PLANTAGO*.

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In working at the genus *Plantago* for Dr. Moss's Flora, the following points of interest have come under notice, in which we are not in entire agreement with other writers on the subject.

Plantago montana Hudson, Fl. Angl. p. 53 (1762). Dr. A. Brand, in the third edition of Koch's *Synopsis*, Band iii. p. 2193, 1903, has taken the name *P. montana* Huds. to be the same as the *P. montana* of Lamarck, a plant of Switzerland, &c. Lamarck (Illustr. i. 34 (1791)) diagnoses his *P. montana* and quotes *Plantago alpina angustifolia* Bauhin, Hist. iii. 506, as a synonym. This is well figured by Sturm (*Deutschlands Flora*, Heft 88, tab. 1 (1843)), and is entirely different from the *P. montana* of Hudson—a plant which Hudson himself, in the second edition of the *Flora Anglica*, reduced to a variety of *P. maritima*. See Journ. Bot. 1907, 23, where the matter is fully discussed.